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09/852,788	05/11/2001	Thomas Baumann	033275-214	5192

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EXAMINER

ROSSI, JESSICA

ART UNIT	PAPER NUMBER
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1733

DATE MAILED: 01/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/852,788

Applicant(s)

BAUMANN ET AL.

Examiner

Jessica L. Rossi

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 10/18/05, Amendment.  
2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.  
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-15, 18-24, 26 and 27 is/are pending in the application.  
4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.  
6) ☒ Claim(s) 1-15, 18-24, 26 and 27 is/are rejected.  
7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.  
8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.  
10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)  
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)  
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.  
4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.  
5) ☐ Notice of Informal Patent Application (PTO-152)  
6) ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Response to Amendment*

1. This action is in response to the amendment dated 10/18/05. Claims 1-15, 18-24 and 26-27 are pending.
2. The rejection of claim 1 under 35 USC 102(b) as being anticipated by Virsbreg (US 3702499), as set forth in paragraph 4 of the previous action, has been withdrawn in light of the present amendment; note the reference teaches applying the shrink sleeve to a bent conductor bar.
3. The rejection of claim 1 under 35 USC 103(a) as being unpatentable over Virsbreg in view of the collective teachings of Hennessey (US 3157449) and Faust (US 5661842), as set forth in paragraph 6 of the previous action, has been withdrawn for the reason stated in the previous paragraph.

### *Claim Rejections - 35 USC § 103*

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
5. Claims 1, 5, 9, 12-15, 18, 21, 23-24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow et al. (US 3164888) in view of Virsbreg (US 3702499, of record).

With respect to claim 1, Sharrow is directed to a method for making an insulated stator winding for a rotating electrical machine (column 1, lines 9-12 and 37-38; column 2, lines 45-46). The reference teaches applying at least one electrically insulating shrink-on sleeve 5, 6, 7, 8, 9, 10 and 11 to a periphery of at least one straight electrically conductive conductor bundle/bar 4 with a rectangular cross-section (Figure 1; column 2, lines 7-8 and 28-29 and 34-37; claim 1)

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and shrinking the shrink-on sleeve onto the conductor bar (column 1, line 14 – column 2, line 15). The reference is silent as to the shrink sleeve having a rectangular cross-section.

It is known in the stator winding for rotating electrical machine art to apply insulation in the form of a heat-shrink sleeve to a conductor bar where the shrink sleeve can have a circular cross-section 5 if the conductor bar has a circular cross-section or a rectangular cross-section 5a if the conductor bar has a rectangular cross-section, as taught by Virsbreg (column 3, lines 7-9 state that Figures 1a and 1b are alternative cross-sections and therefore skilled artisan would have readily appreciated that shrink sleeve 5a with rectangular cross-section is alternative to shrink sleeve 5 with circular cross-section).

Sharrow is directed to overcoming problems in the prior art associated with repairing fibrous insulation that covers individual conductors of a conductor bar when the insulation splits during bending of the conductor bar to form a coil (column 1, lines 41-71). Sharrow eliminates having to repair the split insulation by applying an insulating heat-shrink sleeve to the conductor bar so that any fibrous insulation which does split during bending will be retained in position between the individual conductors by the shrunken sleeve, thereby eliminating the need to repair the split fibrous insulation (column 4, lines 31-44). Therefore, one reading the reference as a whole would have readily appreciated that Sharrow is only concerned with using a shrink sleeve material that is flexible enough to withstand the bending stresses imposed thereon and not with a particular geometry of the sleeve (column 3, line 61 – column 4, line 19).

Therefore, it would have been obvious to the skilled artisan at the time of the invention to use a shrink-sleeve with a rectangular cross-section for that of Sharrow because such a shrink sleeve is known in the art for insulating a conductor bar with a rectangular cross-section, as

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taught by Virsbreg, where applying a shrink sleeve having the same cross-section as the article to which it is applied results in the tightest fit between the sleeve and article.

Regarding claim 5, Sharrow teaches the shrink sleeve being formed of a hot-shrinking material and shrinking under heat (column 2, lines 5-7).

Regarding claim 9, Sharrow teaches applying a plurality of shrink sleeves 5, 6, 7, 8, 9, 10 and 11 (Figure 1; column 2, lines 34-37).

Regarding claim 12, Sharrow teaches the conductor bar surrounded by the shrink sleeve being bent with a bending device into a shape suitable for a stator (Figures 2-3; column 2, lines 56-60).

Regarding claim 13, Sharrow teaches the conductor bar consisting of a plurality of individual conductors 1, 2 and 3 (Figure 1; column 2, lines 28-29).

Regarding claim 14, Sharrow is silent as to temporarily connecting the individual conductors. It would have been obvious to one of ordinary skill in the art at the time the invention was made to temporarily connect the conductors because this would prevent them from moving around during shrinking of the sleeve.

Regarding claim 15, Sharrow teaches the individual conductors not being Roebel-transposed in the area of an involute (Figure 1).

Regarding claim 18, Sharrow teaches the stator winding being used for a dynamo-electric machine (column 1, lines 9-10), where skilled artisan would have readily appreciated such machines being either direct or alternating current machines.

Regarding claim 21, Sharrow teaches at least one of the individual conductors having a rectangular cross-section (column 2, lines 28-29; claim 1).

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Regarding claim 23, Virsbreg teaches the sleeve having a rectangular internal cross-section (Figure 1b; column 3, lines 7-9).

Regarding claim 24, Virsbreg teaches the shrink sleeve being placed around a support sleeve (column 4, lines 41-51).

Regarding claim 27, Sharrow teaches bending the individual conductors (Figures 2-3; column 2, lines 7-8 and lines 40+).

6. Claims 1, 5, 9, 12-15, 18, 21, 23-24 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow et al. in view of Faust (US 5661842, of record) and/or Lambert (EP 0530952, cited in IDS).

With respect to claim 1, if for some reason it is not taken that Virsbreg teaches the shrink sleeve having a rectangular cross-section the following rejection is being set forth:

Applicant is directed to paragraph 5 above for a complete discussion of Sharrow. It would have been obvious to the skilled artisan at the time of the invention to use a shrink sleeve with a rectangular cross-section for that of Sharrow because such a shrink sleeve is known in the art for insulating conductors, as taught by Faust (abstract; column 2, lines 21-25; column 4, lines 55-62; column 5, lines 8-13) and/or Lambert (Figure 8; column 1, lines 9-11; column 2, lines 10-13; column 3, lines 46-58; column 6, lines 18-22), where using a shrink sleeve having the same cross-section as the article to which it is applied results in the tightest fit between the sleeve and article.

Regarding claims 5, 9, 12-15, 18, 21, 23-24 and 27, please see paragraph 5 above.

7. Claims 2-3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert as applied to claim 1 above, and

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further in view of the collective teachings of the Admitted Prior Art in the specification of the present application and Virsbreg.

Regarding claim 2, Sharrow is silent as to mechanically dilating the shrink-on sleeve in its cold state and applying the sleeve around an outer periphery of a support sleeve.

It appears that Applicants teach it is known in the insulating shrinkable sleeve art to mechanically dilate a shrink-on sleeve in its cold state and apply the shrink on sleeve around an outer periphery of a support sleeve before the support sleeve is pulled over the article and then removing the support to shrink the sleeve, as an alternative to using a heat-shrinkable sleeve (p. 3-4, [0009]). It is also known in the stator winding for rotating electrical machine art to use a supported shrink sleeve that is applied to a conductor by removing the support as an alternative to a heat-shrink sleeve, as taught by Virsbreg (column 4, lines 39-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to dilate the shrink sleeve of Sharrow and apply it around the outer periphery of a support sleeve because such is know in the shrinkable sleeve art as an alternative to a heat-shrinkable sleeve, as taught by the collective teachings of the Admitted Prior Art and Virsbreg, and one reading Sharrow as a whole would have appreciated that no criticality is placed on how the sleeve is applied to the conductor bar and only the expected results would have been achieved.

Regarding claim 3, the Admitted Prior Art in the specification of the present application teaches removing the support sleeve from between the insulating shrink-on sleeve and the article after the support sleeve surrounded by the shrink-on sleeve has been applied to the article (p. 3, [0009]). It would have been obvious to one of ordinary skill in the art at the time the invention

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was made to remove the support sleeve of Sharrow as suggested by Applicants because such is known in the art, as taught by the Admitted Prior Art, where only the expected results of allowing the sleeve to shrink onto the conductor bar would have been achieved.

Regarding claim 6, Sharrow is silent as to dilating the sleeve with compressed air and pulling the sleeve in a cold state over the conductor bar. Selection of a particular method for dilating the sleeve would have been within purview of the skilled artisan at the time the invention was made absent any unexpected results. It would have been obvious to one of ordinary skill in the art at the time the invention was made to pull the dilated sleeve in a cold state over the conductor bar because it appears that Applicants teach that such a technique is known in the shrinkable sleeve art (p. 3 [0009]) as discussed above in reference to present claim 2.

8. Claims 4, 20 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert and also in view of the collective teachings of the Admitted Prior Art and Virsbreg as applied to claim 2 above, and further in view of the collective teachings of Evans (US 4135553, of record) and Forman et al. (US 5624618, of record).

Regarding claim 4, it is known in the heat-shrinkable sleeve art to remove a support from a shrinkable sleeve by dissolving the support in a solvent, as taught by Evans (column 3, lines 59-61). It is also known to remove a support from the material it is supporting by melting the support as an alternative to dissolving it in a solvent, as taught by Forman et al. (column 3, lines 17-18). Therefore, it would have been obvious to the skilled artisan at the time the invention was made to remove the support from the shrinkable sleeve of Sharrow in view of the Admitted Prior



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Art by melting the support because such is a known alternative for removing a support, as taught by the collective teachings of Evans and Forman, and this allows for easy removal of the same.

Regarding claim 20, Evans and Forman teach the support being polymeric. Selection of a polymeric support having particular characteristics would have been within purview of the skilled artisan at the time the invention was made depending on the materials of the sleeve and article onto which the sleeve is shrunk.

Regarding claim 26, the skilled artisan would have appreciated that the softened support sleeve of Sharrow in view of the Admitted Prior Art and further in view of the collective teachings of Evans and Forman would adhere on the surface of the conductor bar and therefore fill any voids (i.e. spaces between conductors).

9. Claims 7-8 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert as applied to claim 1 above, and further in view of Mohebban et al. (US 4589939, of record).

Regarding claim 7, Sharrow is silent as to the sleeve being made of a plurality of radially superimposed layers each having different properties. It would have been obvious to one of ordinary skill in the art to use a heat-shrinkable sleeve having a plurality of radially superimposed layers with different properties because such is known in the conductor insulating art, as taught by Mohebban (column 2, lines 61-65), where this allows for manipulation of the properties of the sleeve.

Regarding claim 8, Sharrow is silent as to how the sleeve is made. It would have been obvious to one of ordinary skill in the art at the time the invention was made to co-extrude the

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sleeve because such is known in the art, as taught by Mohebban (column 2, lines 55-56), and this allows for continuous production of the sleeve.

Regarding claim 22, Mohebban teaches one of the layers being the main insulation (column 6, lines 62-65).

10. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert as applied to claim 1 above, and further in view of Dienes (US 3946480, of record).

Regarding claim 10, Sharrow is silent as to providing adhesive between the sleeve and conductor bar. It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply adhesive to the inside of the sleeve or the outside of the conductor bar because such is known in the conductor insulation art, as taught by Dienes (column 5, line 64 – column 6, line 1), where this would ensure a good bond between the same. Selection of a particular adhesive would have been within purview of the skilled artisan depending on the desired characteristics.

11. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert as applied to claim 1 above, and further in view of Vallauri et al. (US 5985062, of record).

Regarding claim 11, Sharrow is silent as to the sleeve being an extruded elastomer. Selection of a particular material for the sleeve would have been within purview of the skilled artisan at the time the invention was made depending on the desired characteristics thereof. However, it is known in the art to make insulation sleeves from extruded elastomeric material wherein these sleeves are applied as insulation to conductors, as taught by Vallauri (column 3,

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lines 20-21 and 47-51). Therefore, it would have been obvious to the skilled artisan to use an extruded elastomer for the sleeve of Sharrow because such is known in the conductor insulating art, as taught by Vallauri, wherein such a material works well in heat-shrink applications.

12. Claim 19 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sharrow in view of Virsbreg or Sharrow in view of Faust and/or Lambert and also in view of the collective teachings of the Admitted Prior Art and Virsbreg as applied to claim 3 above, and further in view of Krackeler (US 4585607, of record).

Regarding claim 19, the Admitted Prior Art (p. 4, [0009]) and Krackeler (Figure 5; column 2, lines 20-22) teach the support being removed along helically arranged perforations. Therefore, it would have been obvious to the skilled artisan at the time the invention was made to remove the support from the shrinkable sleeve of Sharrow in the manner claimed by Applicants because such is a known alternative for removing a shrink sleeve support, as taught by the collective teachings of the Admitted Prior Art and Krackeler, where this allows for easy removal of the same.

#### ***Response to Arguments***

13. Applicant's arguments filed 10/18/05 have been fully considered but they are not persuasive.

14. Let it be noted that Applicant did not refute the examiner's position taken in paragraph 4 of the previous action that Virsbreg teaches a shrink sleeve having a rectangular cross-section and therefore it is being made of record that Applicant agrees with the examiner's position.

15. On page 9 of the remarks, Applicant argues that Virsbreg teaches applying the shrink sleeve to bent coils.

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The examiner points out that Virsbreg is now only being used a secondary reference to show it being known in the stator winding for rotating electrical machine art to apply insulation in the form of a heat-shrink sleeve to a conductor bar where the shrink sleeve can have a circular cross-section 5 if the conductor bar has a circular cross-section or a rectangular cross-section 5a if the conductor bar has a rectangular cross-section.

16. On page 10 of the remarks, Applicant argues that while Faust may teach shrink sleeves having rectangular cross-sections, the reference does not teach insulating rectangular conductor bars for rotating electrical machines.

The examiner points out that Faust was only used to show it being known in the shrink sleeve art to use a shrink sleeve having a rectangular cross-section as an alternative to one having a circular cross-section when insulating an electrically conductive member.

### ***Conclusion***

17. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event,

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however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to **Jessica L. Rossi** whose telephone number is **571-272-1223**. The examiner can normally be reached on M-F (8:00-5:30) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard D. Crispino can be reached on 571-272-1226. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

**JESSICA ROSSI**  
**PRIMARY EXAMINER**

